

the opposing villi, blood-pressure is maintained and hemorrhage from the sinuses prevented. If from any cause the coaptation of the villi and the uterine wall becomes impaired, then the maternal vessels may rupture and hemorrhage result. Atony of the uterus is a not infrequent condition in many ill-nourished and debilitated patients in whom hemorrhage during early pregnancy is not infrequently observed.

OPHTHALMOLOGY.

UNDER THE CHARGE OF

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The Pupil in General Disease.—JACK, Boston (*Boston Medical and Surgical Journal*, September 26, 1901), gives a summary of the pupillary phenomena in general disease.

The afferent path of the reflex arc for light reaction is the optic nerve and tract branching by some path to the pupil-contracting centre in the floor of the third ventricle, whence the third nerve to the iris is the efferent path. The associated contraction to convergence and accommodation is brought about by the same centre near which are situated those for convergence and accommodation. The active dilating centre is the cilio-spinal in the lower cervical cord. The normal moderate dilatation is dependent upon the constant psychical and sensitive stimuli transmitted through the sympathetic to the iris—the sympathetic reflex. The eyes should be tested one at a time for the light reflex, the other being covered. The patient should look at a distance so as to avoid bringing in the associated contraction for convergence and accommodation. So long as perception of light remains the reflex will take place, but the reverse is not true—i. e., the vision may be good and no contraction of the pupil occur, as in paralysis of the sphincter, for example, by a mydriatic. The pupil of the second eye will also react to light thrown upon its fellow because of the nervous connection between the two sides. A blind eye will not react to light thrown on its own retina, nor will the second eye, but both will react perfectly if light be thrown on the other sound eye. There is a rare exception to the rule that pupils of blind eyes will not react—that is, when a lesion is high up in the optic tract, as in uræmia. Local diseases of the eye and drugs internally or locally may cause anomalies in the reactions and shape of the pupil, and these must be excluded in studying the effect of general disease. Dilatation may be paralytic (third nerve) or irritative (sympathetic); so likewise contraction may be paralytic (sympathetic) or irritative (third nerve). Paralytic mydriasis

is seen in progressive paralysis (myosis at first) and in various disease processes at the base of the brain affecting the third nerve or its nucleus. Irritative mydriasis occurs in spinal meningitis of the cervical portion of the cord, in the spinal irritation of anæmic or chlorotic patients, after severe illness, as a premonitory sign of tabes, from intestinal worms; psychical excitement—acute mania, melancholia—in general paralysis, oftener then in one eye only with myosis in the other. Unilateral mydriasis occurring at short intervals, first in one eye and then in the other, is, according to von Graefe, a premonitory sign of mental derangement. Unequal pupils are said to be always pathological, but there are rare exceptions. They are said to occur in hysteria. Irritation myosis occurs in the early stages of inflammatory affections of the brain and meninges; later there is dilatation in the stage of depression. Paralytic myosis occurs in spinal lesions above the dorsal vertebra—tabes, injuries, inflammations, etc. In acute mania, if myosis comes on, general paralysis may be prognosticated.

In the Argyll-Robertson pupil—reaction to accommodation, but not to light—the reflex arc is broken somewhere probably between the point where the optic fibres leave the tract and the nucleus of the third nerve. This is a frequent and early symptom in tabes; the pupils are usually, but not always, very small. The reaction to convergence is lost later. The same phenomenon is present in general paralysis, but less frequently, and usually later. In this disease pupillary symptoms are frequent and early, beginning usually as an inequality, the same being present in other forms of insanity. The Argyll-Robertson pupil always means the existence or approach of serious nervous disease.

Wernicke's symptom—light reflex preserved when light is thrown on the blind half of an hemianopic eye—is present if the lesion be above the reflex arc in the brain. Exceptionally the pupil may react when the lesion is in the arc, the special fibres for the reflex being perhaps more resistant than the ordinary fibres.

The paradoxical pupil symptom is the slight oscillation—hippus—which rapidly goes on to dilatation instead of contraction—considered an early sign of coming paralysis, also reported in hysteria and disseminated sclerosis. In the algid stage of cholera, if the light reflex is present the prognosis is good; if absent, bad. In epilepsy there is usually contraction first and dilatation later, the light reflex being lost—an important point in distinguishing the attack from hysteria. The writer, however, asserts that he has observed dilated and irresponsible pupils in hysteria. Both bilateral and unilateral mydriasis has been noticed in diabetes.

For diagnosis of the situation and nature of intracranial lesions the pupillary symptoms, if alone present, are of but little significance. If other branches or nerves are involved the importance may become considerable, especially considering the early period at which some pupillary changes occur.

Depression of the Lens in Cataract.—MR. POWER, London (*British Medical Journal*, October 26, 1901), makes a plea for the occasional performance of this operation. After referring to the fair measure of success obtained by native itinerants in India, who practice the operation with a

total disregard of all antiseptic precautions and even common cleanliness, he thinks that a field for it exists, notwithstanding the brilliant results obtained from extraction by modern methods. The classes of cases in which he advises it are those in which conditions are present which render it doubtful whether any operation should be undertaken—for example: (1) Those who are greatly enfeebled by age and other infirmities; (2) where physical obstacles to extraction are present, *e. g.*, small palpebral fissures, small eye and deeply set in the orbit; (3) chronic conjunctivitis and dacryocystitis; (4) considerable degree of deafness; (5) in the insane; (6) chronic bronchitis; (7) fluid vitreous, with tremulous iris; (8) where extraction has been unsuccessfully performed in one eye; (9) in the hemorrhagic diathesis.

Paralysis of the Facial and Paralysis of the Lateral Associated Movements of the Eyeballs of the Same Side, with the Electrical Reactions of the Affected Muscles.—PECHIN and ALLARD, Paris (*Gaz. Heb. de Med. et de Chir.*, August 29, 1901) insist that paralysis of the associated lateral movements of the eyeball alone or accompanied by other palsies, as a rule, presents great difficulties in diagnosing the situation of the lesion, due in part to the fact that our knowledge of the co-ordinating centres of the ocular globes is still imperfect. When the paralytic phenomena appearing to be due to an organic lesion show departures from the usual clinical picture, and, besides, the patient is a hysterical subject, the difficulty of determining the syndrome becomes very great. They report the following case:

Female, aged forty-six years, married, has suffered from hysteria and also true mental disturbance. About a year and a half before coming under the authors' observation she experienced sudden disturbance of vision, with deviation of the angle of the mouth. She continued to have frequent nervous crises, with visual and auditory hallucinations. Examination showed complete facial palsy on the left side. The skin of the forehead and cheek perfectly smooth; the left eye more widely open than the right; the mouth is slightly deviated to the right and drawn downward; the frontalis and orbicularis palpebrarum completely paralyzed on the left side; the left eye cannot be perfectly closed—during sleep a portion of the globe is exposed—but in spite of such partial lagophthalmia there has been no neuroparalytic keratitis; no epiphora; slight deviation of the tongue and uvula to the left (the paralyzed side).

Electrical examination gave the following results: No modification in the limbs and trunk; in the face considerable augmentation of faradic and galvanic irritability of the nervous trunk of the facial, of its three branches, and of all the muscles of the face. Diminution of the cutaneous sensibility to faradization.

Frequent headache, buzzing in the ears, especially in the right; hemianæsthesia of the left side, extending to the face; pharynx anæsthetic; ovarian spot on the right side.

Gait peculiar, spasmodic. She scrapes the ground with her feet, the latter hardly raised. Knee-jerk normal; reflex of the fascia lata preserved; Babinsky's sign absent.

Ocular conditions: Paralysis of the lateral associated movement upon attempting to look to the left. The eyeballs do not pass the middle line

Recently a modification has taken place in the right eye—slight adduction, with nystagmiform movements. The left eye always stops in the so-called primary position. There is no abduction. Convergence is preserved. When the patient closes the right eye and fixes a line drawn upon a sheet of white paper she quickly has diplopia followed by polyopia. There is besides colored vision. A black line appears bordered with a red and yellow margin; she sees intermittently two superposed rainbows. This monocular diplopia with disturbance of the chromatic sense was always present at repeated examinations.

Cornea completely anæsthetic to touch, with diminished sensibility of the conjunctiva, both palpebral and bulbar, of the left eye.

The visual field seems contracted, but the examination is very difficult because of the patient having a nervous crisis at every attempt at examination. This crisis is characterized by pain in the forehead, followed by contraction of the upper extremities; the head is thrown backward. It terminates by yawning and hiccoughs. It can be stopped by striking the sides of the neck with the hand. The crisis appears both when the attention is fixed and by electrifying the frontal region.

Fundus of the eye normal; no optic neuritis; no amaurosis; no amblyopia.

As to the seat of the lesion causing the ocular and facial paralysis, after excluding an hysterical, a peripheral, nuclear, and cortical origin, the writers conclude that the palsy is due to a lesion seated in the corpora quadrigemina or their neighborhood—the co-ordinating centres of the associated movements; these centres are extra-nuclear, supra-nuclear. The lesion is one of pressure, of doubtful nature, perhaps tubercular, involving the posterior longitudinal fibres. A lesion situated there would explain both the facial and ocular palsies.

Ocular Complications of Smallpox.—M. DUFOUR (Lausanne) finds that some ocular lesion occurs in from 10 to 15 per cent. of all cases of smallpox. In the majority of these it is a conjunctivitis, but in about 30 per cent. of the ocular cases the cornea is involved. Next in frequency to the cornea the lacrymal apparatus is liable to suffer. He reports a case in which on the twelfth day of the eruption the cornea became involved, an abscess formed, and it seemed as though useful vision would be lost. Subconjunctival injections of a solution of corrosive sublimate 1 : 2000 were practised at intervals of two or three days, with instillations of atropine. The corneal disease was promptly checked, and the eye recovered with a partial leucoma, numerous synechiæ, and vision equal to counting fingers at 3 metres, which might be improved by a subsequent iridectomy.

J. COURMONT and ET. ROLLET (Lyons) have encountered forty-five cases of involvement of the conjunctiva or cornea in 691 cases of smallpox. They have resorted to instillations of a solution of methylene blue, 1 : 500, repeated several times a day, to abort these ocular lesions. They regard the value of this treatment in preventing a permanent damage to the eye from variola as equal to that of the Credé method of using solutions of silver nitrate for the prevention of blindness from ophthalmia neonatorum. They regard the corneal affection as a specific process not dependent on the ordinary pyogenic organisms.—*Annales d'Oculistiques*, May, 1901).